



**STATE OF HAWAII
DEPARTMENT OF HEALTH**

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NPDES PERMIT NO. HI 0110141

**FACT SHEET: APPLICATION FOR RENEWAL OF NATIONAL POLLUTANT
DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO
DISCHARGE TO KAUKONAHUA AND WAIKELE STREAMS,
WATERS OF THE UNITED STATES**

PERMITTEE: AQUA ENGINEERS, INC.

FACILITY: SCHOFIELD BARRACKS WASTEWATER TREATMENT PLANT

FACILITY MAILING ADDRESS

Schofield Barracks Wastewater
Treatment Plant
393 Airdrome Road
Wahiawa, Hawaii 96786
Contact: Jan K. Reyes
Operations Manager
(808) 685-7872

PERMITTEE MAILING ADDRESS

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FACILITY STREET ADDRESS

Schofield Barracks Wastewater
Treatment Plant
393 Airdrome Road
Wahiawa, Hawaii 96786

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This fact sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of the draft permit.

A. Permit Information

The following table summarizes administrative information related to the Schofield Barracks Wastewater Treatment Plant (facility).

Table F-1. Facility Information

Permittee	Aqua Engineers, Inc.		
Name of Facility	Schofield Barracks Wastewater Treatment Plant		
Facility Address	393 Airdrome Road Wahiawa, Hawaii 96786		
Facility Contact, Title, and Phone	Jan K. Reyes, Operations Manager Phone: (808) 685-7872		
Authorized Person to Sign and Submit Reports	Gregory Wilson, Director of Operations Telephone: (808) 694-3112		
Mailing Address	P.O. Box 861561 Wahiawa, Hawaii 96786		
Billing Address	Same as above		
Type of Facility	Wastewater Treatment Plant		
Pretreatment Program	Yes		
Recycling Requirements	NA		
Facility Design Flow	Outfall Serial No.	Secondary-Treated Wastewater	Storm Water Associated with Industrial Activity
	001	4.2 (design flow)	NA
	002	NA	Varies
	003	NA	Varies
Receiving Waters	Kaukonahua and Waialeale Streams		
Receiving Water Type	Inland		
Receiving Water Classification	Class 2 Inland Waters – Streams		

1. NPDES Permit No. HI 0110141, became effective on February 9, 2013 and expired on January 8, 2018. Aqua Engineers, Inc. (Permittee) reapplied for an NPDES permit and ZOM on October 6, 2017. The Hawaii Department of Health (DOH) administratively extended the NPDES permit, on January 19, 2018, effective as of January 8, 2018, pending the reapplication process.
2. The Director of Health (hereinafter Director) proposes to issue a permit to discharge to the waters of the state until **<DATE>**, and has included in the draft permit those terms and conditions which are necessary to carry out the provisions of the Federal

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Water Pollution Control Act (P.L. 92-500), Federal Clean Water Act (CWA) (P.L. 95-217) and Chapter 342D, Hawaii Revised Statutes.

B. Facility Setting

1. Facility Operation and Location

The facility is located at Schofield Barracks in Central Oahu, Hawaii, and services the Schofield Barracks Military Reservation, Helemano Military Reservation, Leilehua Golf Course, East Range training area, and Wheeler Army Airfield, with a service area population totaling approximately 22,000 people. The facility treats domestic and industrial wastewater and produces R-1 quality recycled water. The treatment process consists of a membrane bioreactor (MBR) system and ultraviolet (UV) disinfection. All R-1 effluent is discharged to the Waialua Sugar Co. irrigation flume and reused by farmers (Waikele Farm and Kunia Water Association). Sludge is treated by anaerobic digestion and dewatered by two screw presses. The final sludge product is disposed in a landfill.

The design capacity of the facility is 4.2 million gallons per day (MGD). Peak wet-weather flow capability is 9.6 MGD. Per the renewal application, annual average flow rates over the last three years have been 2.31 MGD, 2.36 MGD, and 2.30 MGD. Maximum daily flow rates for the facility over the last three years were 3.92 MGD, 3.41 MGD, and 2.72 MGD. In 2017, the Permittee replaced the MBR system membrane, fine screens, and the fine screen compactor; painted the pump and lift stations; and replaced the centrifuge dewatering system with a screw press dewatering system. Upcoming projects for 2018-2019 include replacement of air blowers, the back pulse and permeate pumps, primary sludge grinders, and the Helemano Kam/Dole SPS generator, ATS, and tank.

Under normal operations, all influent water is treated to R-1 quality and is discharged into an irrigation system. However, when maintenance is performed on the irrigation system, or when the irrigation system is satiated and the 20 calendar days of storage capacity required for R-1 designation has been expended, secondary effluent may be diverted and allowed to discharge into Kaukonahua Stream through Outfall Serial No. 001 located at: Latitude 21°30'01" N and Longitude 158°03'02" W. In the past 19 years, there have been two discharges (January 2009 and January 2011) for durations of five days each.

The facility sits on a grassed slope that drains to the south side of the property. Most of this storm water drains to a low point at the southwest corner of the property into a tributary of Waikele Stream through Outfall Serial No. 002 located at: Latitude 21°28'31" N and Longitude 158°02'41" W. Storm water can also flow toward the southeast corner of the property into a tributary of Waikele Stream through

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Outfall Serial No. 003, located at: Latitude 21°28'31" N and Longitude 158°02'35" W. The ditch is normally dry until a significant storm event. Waikele Stream enters West Loch of Pearl Harbor approximately eight miles to the south.

Table F-2. Outfall Locations

Outfall Serial No.	Effluent Description	Outfall Latitude	Outfall Longitude
001	Secondary-Treated Wastewater	21° 30' 01" N	158° 03' 02" W
002	Storm Water Associated with Industrial Activity	21° 28' 31" N	158° 02' 41" W
003	Storm Water Associated with Industrial Activity	21° 28' 31" N	158° 02' 35" W

Figure 1 of the draft permit provides a map showing the location of Schofield Barracks Wastewater Treatment Plant on the island of Oahu. Figure 2 of the draft permit provides a topographic map of the storm water discharge points. Figure 3 of the draft permit shows monitoring station locations. Figure 4 of the draft permit provides a flow diagram of the facility.

2. Receiving Water Classification

The receiving waters, Kaukonahua and Waikele Streams, are classified by the DOH as Class 2 Inland Waters under Hawaii Administrative Rules (HAR), Section 11-54-5.2(a). The uses to be protected are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharges which have not received the best degree of treatment or control compatible with the criteria established for this class.

3. Impaired Water Bodies on CWA 303(d) List

CWA section 303(d) requires states to identify specific water bodies where water quality standards (WQSs) are not expected to be met after implementation of technology-based effluent limitations on point sources.

On August 16, 2018, the EPA approved the 2018 State of Hawaii Water Quality Monitoring and Assessment Report, which includes the 2018 303(d) List of Impaired Water Bodies in the State of Hawaii.

The report identifies Kaukonahua Stream as a Medium Priority, Category 2, 3 and 5 waters in the assessment report. The report also indicates that Kaukonahua Stream is currently not attaining water quality criteria for total

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nitrogen, nitrate + nitrite nitrogen, and turbidity. Currently, no TMDLs have been developed for this segment of Kaukonahua Stream.

Waikele Stream is identified as a High Priority, Category 3 and 5 waters in the assessment report. According to the report, Waikele Stream is not currently attaining water quality criteria for total nitrogen, nitrate + nitrite nitrogen and turbidity. TMDLs are currently being developed for Waikele Stream.

4. Summary of Existing Effluent Limitations and Monitoring Data

a. Secondary-Treated Wastewater

Effluent limitations contained in the existing permit for discharges from Outfall Serial Nos. 001 and 002 and representative monitoring data from March 2013 through September 2017, are presented in the following tables.

**Table F-3. Historic Effluent Limitations and Monitoring Data –
Outfall Serial No. 001**

Parameter	Units	Effluent Limitation ¹			Reported Data ²		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Flow	MGD	--	--	--	ND		
Biochemical Oxygen Demand (5-day) ¹	mg/L	30	45	--	ND		
	kg/day	363	545	--	ND		
	% removal	85%			ND		
Total Suspended Solids (TSS) ¹	mg/L	30	45	--	ND		
	kg/L	363	545	--	ND		
	% removal	85%			ND		
pH	s.u.	Not less than 6.0 nor greater than 8.0 Standard Units			ND		
Whole Effluent Toxicity	--	Pass			ND		
Total Nitrogen	mg/L	520 ²			ND		
	mg/L	380 ³			ND		
Nitrate + Nitrite Nitrogen	mg/L	180 ²			ND		
	mg/L	90 ³			ND		
Ammonia Nitrogen	mg/L	Report			ND		
Total Phosphorus	mg/L	100 ³			ND		
	mg/L	60 ⁴			ND		
Turbidity	NTU	15.0 ³			ND		
	NTU	5.5 ⁴			ND		

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Parameter	Units	Effluent Limitation ¹			Reported Data ²		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Oil and Grease	mg/L	15			ND		
Copper, Total Recoverable	µg/L	6			ND		
Nickel, Total Recoverable	µg/L	5			ND		
Selenium, Total Recoverable	µg/L	20			ND		
Zinc, Total Recoverable	µg/L	22			ND		
Enterococci	#/100 ml	33 ⁵	--	--	ND	ND	ND
Priority Pollutant Scan ⁶	mg/L	Report			ND		

ND – No Discharge

s.u. – Standard Units

¹ The mass emission rates for discharge limitations for Biochemical Oxygen Demand (5-day) and Total Suspended Solids are based on a discharge flow of 3.2 MGD.

² This limitation applies during the wet season (November 1st through April 30th).

³ This limitation applies during the dry season (May 1st through October 31st).

⁴ Limit is both geometric mean and single sample maximum.

⁵ The Permittee shall conduct a priority pollutant scan on the secondary-treated effluent at least once per calendar year. The priority pollutant scan shall include testing for those parameters listed in Attachment B, except asbestos, and shall be conducted in accordance with 40 CFR Part 136.

b. Storm Water Associated with Industrial Activity

The current permit required the Permittee to monitor storm water from a discharge resulting from a representative storm. The following storm water runoff data was taken from annual DMRs submitted by the Permittee from December 2013 through December 2016.

**Table F-4. Historic Storm Water Limitations and Monitoring Data –
Outfall Serial No. 002**

Parameter	Units	Storm Water Limitation	Maximum Value Reported
Flow	MGD	Report	0.19
Biochemical Oxygen Demand (5-day)	mg/L	Report	42.4
Chemical Oxygen Demand	mg/L	Report	27
TSS	mg/L	Report	161
Total Phosphorus	mg/L	Report	0.46

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Parameter	Units	Storm Water Limitation	Maximum Value Reported
Total Nitrogen	mg/L	Report	2.8
Nitrate + Nitrite Nitrogen	mg/L	Report	2
Oil and Grease	mg/L	15	1.8
pH	s.u.	5.5 – 8.0	6.64 – 8.77
Fecal Coliform	#/100 ml	400	1,600

5. Compliance Summary

a. Monitoring Results

(1) Secondary-Treated Wastewater

There were no discharges of effluent during the permit term. Therefore, there were no effluent exceedances.

(2) Storm Water Associated with Industrial Activity

There were two exceedances during the current permit term, both occurring in 2015. The pH result was 8.77 standard units and the fecal coliform result was 1,600 cfu/100 ml (see Table F-4 above).

b. Inspections Conducted

The DOH, Clean Water Branch with PG Environmental, LLC conducted Compliance Evaluation Inspections (CEI) of the facility on April 9, 2015 and April 20, 2017. Specific comments from the inspections are listed below.

- 2015 Inspection Notes:

- Blower #1 was not operational due to the lack of a working motor during the time of the inspection.
- Digester #3 was not in operation at the time of the inspection.
- Standard operating procedures (SOPs) manual for the system was not available at the time of the inspection.

- 2017 Inspection Notes

- Influent fine screens were allowing wipes and solids bypassing the screens and accumulating in the equalization basins and primary clarifiers.
- Struvite accumulation on the influent composite.
- Storm water pollution control plan (SWPCP) was not current at the time of the inspection and had not been updated since approximately 2005.
- Multiple treatment units that affect the efficiency or operability of the overall treatment system were either out of service or had not been adequately maintained, including the grit screening/headworks, solids handling and effluent sampling vault.

c. Facility Incidents

The Permittee incurred approximately 17 reported spills from June 2013 until March 2017. The spills were contained within the facility and did not reach receiving waters.

6. Planned Changes

There are no planned changes expected during the term of the draft permit.

C. Applicable Plans, Policies, and Regulations

1. Hawaii Administrative Rules, Chapter 11-54

On November 12, 1982, the Hawaii Administrative Rules, Title 11, Department of Health, Chapter 54 became effective (hereinafter HAR, Chapter 11-54). HAR, Chapter 11-54 was amended and compiled on October 6, 1984; April 14, 1988; January 18, 1990; October 29, 1992; April 17, 2000; October 2, 2004; June 15, 2009; October 21, 2012; December 6, 2013; and the most recent amendment was on November 15, 2014. HAR, Chapter 11-54 establishes beneficial uses and classifications of state waters, the state antidegradation policy, zones of mixing standards, and water quality criteria that are applicable to the State waters.

Requirements of the draft permit implement HAR, Chapter 11-54.

2. Hawaii Administrative Rules, Chapter 11-55

On November 27, 1981 HAR, Title 11, Department of Health, Chapter 55 became effective (hereinafter HAR, Chapter 11-55). HAR Chapter 11-55 was amended and compiled on October 29, 1992; September 22, 1997; January 6, 2001; November 7, 2002; August 1, 2005; October 22, 2007; June 15, 2009; October 21, 2012; December 6, 2013; November 15, 2014; and the most recent amendment was on July 13, 2018. HAR, Chapter 11-55, establishes standard permit conditions and requirements for NPDES permits issued in Hawaii.

Requirements of the draft permit implement HAR, Chapter 11-55.

3. State Toxics Control Program

NPDES Regulations at 40 CFR 122.44(d) require permits to include water quality-based effluent limitations (WQBELs) for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a WQS. The *State Toxics Control Program: Derivation of Water Quality-Based Discharge Toxicity Limits for Biomonitoring and Specific Pollutants* (hereinafter, STCP) was finalized in April 1989, and provides guidance for the development of water quality-based toxicity control in NPDES permits by developing the procedures for translating WQSs in HAR, Chapter 11-54, into enforceable NPDES permit limitations. The STCP identifies procedures for calculating permit limitations for specific toxic pollutants for the protection of aquatic life and human health.

Guidance contained in the STCP was used to determine effluent limitations in the draft permit.

D. Rationale for Effluent Limitations and Discharge Specifications

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. NPDES regulations establish two principal bases for effluent limitations. At 40 CFR 122.44(a), permits are required to include applicable technology-based limitations and standards; and at 40 CFR 122.44(d), permits are required to include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. When numeric water quality objectives have not been established, but a discharge has the reasonable potential to cause or contribute to an excursion above a narrative criterion, WQBELs may be established using

one or more of three methods described at 40 CFR 122.44(d) – 1) WQBELs may be established using a calculated water quality criterion derived from a proposed state criterion or an explicit state policy or regulation interpreting its narrative criterion; 2) WQBELs may be established on a case-by-case basis using EPA criteria guidance published under CWA Section 304(a); or 3) WQBELs may be established using an indicator parameter for the pollutant of concern.

1. Technology-Based Effluent Limitations (TBELs)

a. Scope and Authority

CWA section 301(b) and 40 CFR Part 122.44(a) require that permits include applicable TBELs and standards. The CWA requires that TBELs be established based on best practicable treatment and control technology (BPT), best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and New Source Performance Standards (NSPS).

b. Applicable TBELs

The CWA Section 301 requires Publicly-Owned Treatment Works (POTWs) to achieve secondary treatment capability by 1977 unless granted a waiver. 40 CFR 133.102, Secondary Treatment, establishes the minimum level of effluent quality attainable by secondary treatment in terms of the parameters BOD₅, total suspended solids, and pH.

Although the facility does not meet the definition of a POTW, the draft permit establishes technology-based effluent limitations based on the Secondary Treatment requirements. Except being privately owned, the facility otherwise operates and functions like a POTW.

(1) BOD₅

The discharge shall not exceed the following BOD₅ limitations.

Table F-5. Effluent BOD₅ Limitations

Calculation	Units	Limit
30-Day Average	mg/L	30
7-Day Average	mg/L	45
30-Day Average Percent Removal	%	85

(2) TSS

The discharge shall not exceed the following total suspended solids limitations.

Table F-6. Effluent TSS Limitations

Calculation	Units	Limit
30-Day Average	mg/L	30
7-Day Average	mg/L	45
30-Day Average Percent Removal	%	85

(3) pH

40 CFR 133.102(c) establishes that the discharge values for pH shall be maintained within the limits of 6.0 to 9.0 standard units.

2. Water Quality-Based Effluent Limitations (WQBELs)

a. Scope and Authority

NPDES Regulations at 40 CFR 122.44(d) require permits to include WQBELs for pollutants, including toxicity, that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an exceedance of a WQS, including numeric and narrative objectives within a standard (reasonable potential). As specified in 40 CFR 122.44(d)(1)(i), permits are required to include WQBELs for all pollutants “*which the Director determines are or may be discharged at a level that will cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard.*”

The process for determining reasonable potential and calculating WQBELs, when necessary, is intended to protect the receiving waters as specified in HAR, Chapter 11-54. When WQBELs are necessary to protect the receiving waters, the DOH has followed the requirements of HAR, Chapter 11-54, the STCP, and other applicable State and federal guidance policies to determine WQBELs in the draft permit.

Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established in accordance with the requirements of 40 CFR 122.44(d)(1)(vi), using (1) EPA criteria guidance under CWA Section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state’s narrative criterion, supplemented with other relevant information.

b. Applicable Water Quality Standards

The beneficial uses and WQSs that apply to the receiving waters for this discharge are from HAR, Chapter 11-54.

(1) HAR, Chapter 11-54. HAR, Chapter 11-54 specifies numeric aquatic life standards for 72 toxic pollutants and human health standards for 60 toxic pollutants, as well as narrative standards for toxicity. Effluent limitations and provisions in the draft permit are based on available information to implement these standards.

(2) Water Quality Standards. The facility discharges to Kaukonahua and Waialeale Streams, which have a dissolved inorganic ion concentration below 0.5 parts per thousand (ppt). As specified in HAR, Chapter 11-54, freshwater standards apply when the dissolved inorganic ion concentration is below 0.5 ppt. As such, if there were effluent discharges, a reasonable potential analysis (RPA) would be conducted using freshwater standards. Additionally, fish consumption water quality standards would also be used in the RPA to protect human health. Where both freshwater standards and fish consumption standards are available for a particular pollutant, the more stringent of the two would be used in the RPA.

40 CFR 122.45(c) requires effluent limitations for metals to be expressed as total recoverable metal. Since water quality standards for metals are expressed in the dissolved form in HAR, Chapter 11-54, factors or translators must be used to convert metal concentrations from dissolved to total recoverable. Default EPA conversion factors were used to convert the applicable dissolved criteria to total recoverable.

(3) Receiving Water Hardness. HAR, Chapter 11-54 contains water quality criteria for six metals that vary as a function of hardness in freshwater. A lower hardness results in a lower freshwater WQS. The metals with hardness dependent standards include cadmium, copper, lead, nickel, silver, and zinc. Ambient hardness values are used to calculate freshwater WQSs that are hardness dependent.

(4) Specific Water Quality Standards for Streams. The facility discharges into Kaukonahua and Waialeale Streams, which are designated as Class 2, Inland Streams in HAR, Section 11-54-5.1(a)(C). HAR, Section 11-54-5.2(b) contains the specific water quality criteria for streams based on seasonal rainfall. The wet season criteria are applicable from November

1st through March 31st and the dry criteria are applicable from April 1st through October 31st.

c. Determining the Need for WQBELs

NPDES regulations at 40 CFR 122.44(d) require effluent limitations to control all pollutants which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state WQS. Assessing whether a pollutant has reasonable potential is the fundamental step in determining whether or not a WQBEL is required.

(1) Reasonable Potential Analysis (RPA). The RPA for pollutants with WQS specified in HAR, Chapter 11-54-4, based on the *Technical Support Document for Water Quality-based Toxics Control* (TSD), combines knowledge of effluent variability as estimated by a coefficient of variation with the uncertainty due to a limited number of data to project an estimated maximum receiving water concentration as a result of the effluent. The estimated receiving water concentration is calculated as the upper bound of the expected lognormal distribution of effluent concentrations at a high confidence level. The projected maximum receiving water concentration, after consideration of dilution, is then compared to the WQS in HAR, Chapter 11-54, to determine if the pollutant has reasonable potential. The projected maximum receiving water concentration has reasonable potential if it cannot be demonstrated with a high confidence level that the upper bound of the lognormal distribution of effluent concentrations, adjusted for dilution, is below the receiving water standards.

(2) Effluent Data. Data from the current permit term is used in the RPA.

(3) Dilution. The STCP discusses dilution, defined as the reduction in the concentration of a pollutant or discharge which results from mixing with the receiving waters, for submerged and high-rate outfalls. The STCP states that minimum dilution is used for establishing effluent limitations based on chronic criteria and human health standards for non-carcinogens, and average conditions are used for establishing effluent limitations based on human health standards for carcinogens.

HAR chapter 11-54-9, allows the use of a ZOM to demonstrate compliance with WQS for nutrients. ZOMs consider initial dilution, dispersion, and reactions from substances which may be considered to be pollutants. However, due to other potential sources of pollutants into the receiving water, such as storm water runoff or unidentified discharges, it is often

problematic to determine the cause of WQS exceedances in the receiving water at the edge of a ZOM. It is more practical to determine the available dilution provided in the ZOM and apply that dilution to the WQS to calculate an effluent limitation that can be applied end-of-pipe.

The facility had no effluent discharges during the current permit term and therefore no data is available for performing an RPA.

d. WQBEL Calculations

Specific pollutant limits may be calculated for both the protection of aquatic life and human health.

(1) WQBELs based on Aquatic Life Standards. The STCP categorizes a discharge from a facility into one of four categories: (1) marine discharges through submerged outfalls; (2) discharges without submerged outfalls; (3) discharges to streams; or (4) high-rate discharges. Once a discharge has been categorized, effluent limitations for pollutants with reasonable potential can be calculated, as described below.

- (a)** For marine discharges through submerged outfalls, the daily maximum effluent limitation shall be the product of the chronic WQS and the minimum dilution factor;
- (b)** For discharges without submerged outfalls, the daily maximum effluent limitation shall be the acute toxicity standard. More stringent limits based on the chronic standards may be developed using BPJ;
- (c)** For discharges to streams, the effluent limitation shall be the most stringent of the acute standard and the product of the chronic standard and dilution; and
- (d)** For high rate outfalls, the maximum limit for a particular pollutant is equal to the product of the acute standard and the acute dilution factor determined according to Section II.B.4 of the STCP. More stringent limits based on chronic standards may be developed using BPJ.

(2) WQBELs based on Human Health Standards. The STCP specifies that the fish consumption standards are based upon the bioaccumulation of toxics in aquatic organisms followed by consumption by humans. Limits based on the fish consumption standards should be applied as 30-day averages for non-carcinogens and annual averages for carcinogens.

The effluent from this facility does not discharge through a submerged outfall. Therefore, for pollutants with reasonable potential, the draft permit establishes, on a pollutant by pollutant basis, daily maximum effluent limitations based on the freshwater acute aquatic life standard, and average monthly effluent limitations for non-carcinogens or annual average effluent limitations for carcinogens based on the human health standard. Since there was no discharge during the permit term, WQBELs established in the draft permit are retained from the current permit.

(3) WQBELs based on current permit. No effluent monitoring was performed during the current permit term (2012 – present). Therefore WQBELs from the current permit for total nitrogen, nitrate + nitrite nitrogen, total phosphorus, turbidity, copper, selenium, zinc, nickel and enterococcus, based on RPA performed using effluent data from two discharge events during the previous permit term (2009 and 2011), were included in the draft permit, except as discussed below.

(a) Total Nitrogen and Total Phosphorus

The current permit limits for total nitrogen and total phosphorus were based on the "not to exceed the given value more than ten per cent of the time" criteria in HAR, 11-54-5.2(b), specific criteria for streams. Although, DOH's new implementation procedures for regulating nutrients requires that these parameters be regulated by mass loading on an annual basis using the "geometric mean not to exceed the given value" criteria and the facility's design flow, the "not to exceed the given value more than ten per cent of the time" criteria was used since the facility is only allowed to discharge for 36 days per year.

$$\text{Limitation (lb/day)} = \text{Ten Percentile Water Quality Criteria (mg/L)} * \text{Design Flow (MGD)} * 8.34$$

(b) Nitrate + Nitrite Nitrogen

The current permit limits for nitrate + nitrite nitrogen were also based on the "not to exceed the given value more than ten per cent of the time" criteria in HAR, 11-54-5.2(b), specific criteria for streams. However, DOH's new implementation procedures for regulating nutrients considers total nitrogen to be representative of nitrate + nitrite nitrogen and thus the monitoring and limitation for nitrate + nitrite nitrogen has been removed.

(c) Ammonia Nitrogen and Oil and Grease

Monitoring for ammonia nitrogen and oil and grease was not retained from the current permit because there are no water quality standards for either parameter for the receiving water classification – inland stream. Therefore, there is no reasonable potential for the discharge to cause or contribute to exceedances of the water quality standards for these parameters. This conforms with DOH's new implementation procedures for establishing effluent limitations.

(d) Copper, Nickel and Zinc

As with the current permit, the limitations for copper, nickel and zinc are based on the HAR, 11-54-4(c)(3), freshwater acute criteria. However, because this water quality criteria is expressed as the dissolved fraction and permit limitations must be in terms of the total recoverable portion (40 CFR 122.45(c)), the EPA standard conversion factors found in *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (EPA 823-B-96-007, June 1996) were used to calculate permit limitations based on the total recoverable portion for copper, nickel and zinc. (Note: there is no selenium conversion factor for freshwater.)

- (e) Enterococcus. HAR, Section 11-54-8(b), establishes recreational criteria for all State waters designed to protect the public from exposure to harmful levels of pathogens while participating in water-contact activities. The specified recreational criteria for all State waters are: a geometric mean of 35 CFU/100 mL over any thirty-day interval and a Statistical Threshold Value (STV) of 130 CFU/100 mL. The STV of 130 is applied as a single sample maximum. The current permit established limits of 33 as both geometric mean and single sample maximum limits, and this permit retains those limits, thereby satisfying anti-backsliding regulations.

e. Whole Effluent Toxicity (WET)

WET limitations protect receiving water quality from the aggregated toxic effect of a mixture of pollutants in an effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent or receiving water. The WET approach allows for protection of the narrative criterion specified in HAR, Chapter 11-54-4(c)(2), while implementing Hawaii's numeric WQS for toxicity. There are two (2) types of WET tests – acute and

chronic. An acute toxicity test is conducted over a short period of time and measures mortality. A chronic toxicity test is generally conducted over a longer period of time and may measure mortality, reproduction, or growth.

The proposed WET limitation and monitoring requirements for a discharge which is not submerged are incorporated into the draft permit in accordance with the EPA national policy on water quality-based permit limits for toxic pollutants issued on March 9, 1984 (49 FR 9016), Section 308 of the CWA, as amended, and HAR, Section 11-54-4(c)(4)(C). Also, the proposed WET requirements are based on the draft *National Whole-Effluent Toxicity Implementation Guidance* dated November 2004.

For improved WET analysis, DOH has begun implementing EPA's Test of Significant Toxicity Method (TST) for WET effluent limitations within the State.

Consistent with HAR, Chapter 11-54-4(c)(2)(A), this Permit establishes an acute toxicity effluent limitation based on the TST hypothesis testing approach. The TST approach was designed to statistically compare a test species response to the in-stream waste concentration (IWC) and a control.

The following equation is used to calculate the IWC:

$$\begin{aligned} \text{IWC} &= 100/\text{critical dilution factor} \\ &= 100/1 \\ &= 100\% \end{aligned}$$

For any one acute toxicity test, the acute WET permit limit that must be met is rejection of the null hypothesis (H_0):

A test result that rejects this null hypothesis is reported as "Pass". A test result that does not reject this null hypothesis is reported as "Fail"

The acute and chronic biological effect levels (effect levels of 20% and 25%, respectively, or b values of 0.80 and 0.75, respectively) incorporated into the TST define EPA's unacceptable risks to aquatic organisms and substantially decrease the uncertainties associated with the results obtained from EPA's traditionally used statistical endpoints for WET. Furthermore, the TST reduces the need for multiple test concentrations which, in turn, reduces laboratory costs for dischargers while improving data interpretation. A significant improvement offered by the TST approach over traditional hypothesis testing is the inclusion of an acceptable false negative rate. While calculating a range of percent minimum significant differences (PMSDs) provides an indirect

measure of power for the traditional hypothesis testing approach, setting appropriate levels for β and α using the TST approach establishes explicit test power and provides motivation to decrease within test variability which significantly reduces the risk of under reporting toxic events (U.S. EPA 2010¹).

Taken together, these refinements simplify toxicity analyses, provide dischargers with the positive incentive to generate high quality data, and afford effective protection to aquatic life.

f. Storm Water Associated with Industrial Activity

The storm water runoff from the facility discharging to Outfall Serial Nos. 002 and 003 is associated with industrial activity as defined at 40 CFR 122.26(b)(14)(ii). Accordingly, the proposed storm water discharge conditions and requirements are incorporated as Appendix 2 in the draft permit.

Appendix 2 follows the objectives of the EPA's 2015 MSGP by establishing requirements based on a facility's industrial sector. Appendix 2 includes general requirements applicable to all facilities, additional sector-specific control measures and monitoring requirements, and additional monitoring for storm water discharges into impaired water bodies, as listed in the 2018 303(d) List of Impaired Water Bodies in the State of Hawaii.

In accordance with Appendix 2, the draft permit includes the general requirements for all facilities, sector-specific requirements, and monitoring for parameters for which the receiving water is impaired. The site-specific requirements for Sector T, Treatment Works includes additional technology-based effluent limits in the form of control measures and employee training, and additional Storm Water Pollution Prevention Plan (SWPPP) requirements. Based on the requirements for receiving water impairments, the draft permit shall require monitoring for total nitrogen and total suspended solids. Although the receiving water, Waikele Stream, is listed as impaired for total nitrogen, nitrate + nitrite nitrogen, and turbidity, Appendix 2 allows for testing of surrogate pollutants as an indicator of related pollutants and DOH's new implementation procedures for regulating nutrients considers total nitrogen to be representative of nitrate + nitrite nitrogen, and requires that total suspended solids be monitored in lieu of turbidity. Therefore, the

¹ U.S. Environmental Protection Agency. 2010. *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document*. EPA 833-R-10-003. Washington, DC: Office of Wastewater Management.

resultant storm water monitoring requirements includes monitoring for total nitrogen and total suspended solids.

Numeric effluent limitations were replaced with benchmarks consistent with Appendix 2. The purpose of the benchmark monitoring is to ensure that facilities implement additional control measures if the benchmark is exceeded. Rather than being a permit violation for exceeding a numeric effluent limitation, it will be considered a violation when a Permittee fails to initiate more control measures to reduce the amount of pollutant discharging from their facility when a benchmark is exceeded.

See Appendix 1 for more information.

3. Summary of Final Effluent Limitations

In addition to the effluent limitations specified above, HAR, 11-55-20 requires that daily quantitative limitations by weight be established where possible. Thus, in addition to concentration based-effluent limitations, mass-based effluent limitations (in pounds per day) have been established for BOD and TSS at Outfall Serial No. 001 based on the following formula:

$$\text{lbs/day} = 8.34 * \text{concentration (mg/L)} * \text{flow (MGD)}$$

40 CFR 122.45(b)(1) requires that mass-based effluent limitations for POTWs be based on design flow. The current permit established mass based effluent limitations on a flow of 3.2 MGD because a new anti-degradation analysis based on the increased design capacity (4.2 MGD) had not been performed. This draft continues to include mass-based effluent limitations using a flow of 3.2 MGD.

Mass-based effluent limitations in the current permit were established in kg/day. However, to be consistent with other permits in the State, the draft permit establishes mass-based effluent limitations in lbs/day. Limitations expressed as kg/day are duplicative and therefore have not been retained. The limitations established in this permit meet applicable anti-backsliding and antidegradation requirements, as discussed in Part D.4 and D.5 of this Fact Sheet.

The following table lists final effluent limitations contained in the draft permit and compares them to effluent limitations contained in the current permit.

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Table F-7. Summary of Final Effluent Limitations for Outfall Serial No. 001

Parameter	Units	Effluent Limitations Contained in the Current permit			Proposed Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily
Flow (Outfall Serial No. 001)	MGD	--	--	Report	--	--	Report
Biochemical Oxygen Demand (BOD) (5-day @ 20 Deg. C)	mg/L	30	45	--	30	45	--
	kg/day	363	545	--	--	--	--
	lbs/day	--	--	--	801	1,201	--
	% Removal	As a monthly average, not less than 85 percent removal efficiency from the influent stream.			The average monthly percent removal shall not be less than 85 percent.		
Total Suspended Solids (TSS)	mg/L	30	45	--	30	45	--
	kg/day	363	545	--	--	--	--
	lbs/day	--	--	--	801	1,201	--
	% Removal	As a monthly average, not less than 85 percent removal efficiency from the influent stream.			The average monthly percent removal shall not be less than 85 percent.		
pH	Standard Units	Not less than 6.0 standard units nor greater than 8.0 standard units			Not less than 6.0 standard units nor greater than 8.0 standard units		
Whole-Effluent Toxicity	Pass or Fail	Pass			Pass		
Total Nitrogen	lbs/day	--	--	520 ¹ 380 ²	--	--	18.21 ¹ 13.31 ²
Total Phosphorus	lbs/day	--	--	100 ¹ 60 ²	--	--	3.50 ¹ 2.10 ²
Turbidity	N.T.U.	--	--	15.0, 5.5	--	--	15.0 ¹ 5.5 ²
Enterococci	#/100 ml	33			33 ³		
	#/100 ml	33			33 ⁴		
Copper, Total Recoverable	µg/L	--	--	6.0	--	--	6.25
Nickel, Total Recoverable	µg/L	--	--	5.0	--	--	5.01
Selenium, Total Recoverable	µg/L	--	--	20.0	--	--	20.0
Zinc, Total Recoverable	µg/L	--	--	22.0	--	--	22.49
Priority Pollutant Scan	µg/L ⁵	--	--	Report	--	--	Report

¹ Wet Season Limitation – November 1st through April 30th.

² Dry Season Limitation – May 1st through October 30th.

³ Reported as a geometric mean.

⁴ Reported as a single sample maximum.

⁵ Units changed from mg/L to µg/L to be consistent with HAR 11-54-4 toxics criteria.

4. Satisfaction of Anti-Backsliding Requirements

The CWA specifies that a revised permit may not include effluent limitations that are less stringent than the current permit unless a less stringent limitation is justified based on exceptions to the anti-backsliding provisions contained in CWA 402(o) or 303(d)(4), or, where applicable under 40 CFR 122.44(l). Effluent limitations and requirements for all pollutants contained in this draft permit are retained from those contained in the current permit except as described below.

Ammonia nitrogen and oil and grease limitations were removed because there are no water quality standards for these parameters and therefore no reasonable potential exists for the discharge to cause or contribute to an exceedance of a water quality standard.

The total nitrogen and total phosphorus limitations were calculated using the concentration-based limitations in the current permit to a mass-based loading limitation, consistent with DOH's new implementation procedures.

The nitrate + nitrite nitrogen limitation was removed, also consistent with DOH's new implementation procedures. Total nitrogen is considered to be representative of nitrate + nitrite nitrogen and most appropriate to characterize water quality. This is because the various forms of nitrogen, including nitrate + nitrite nitrogen, continually change within the receiving water.

Storm water associated with industrial activity is regulated in the draft permit based on the EPA's 2015 MSGP (Appendix 2 of the draft permit). The storm water requirements in Appendix 2 (draft permit), in lieu of numeric effluent limitations, establishes non-numeric effluent limitations for storm water, including control measures, inspections, benchmarks, corrective actions, etc.) which are as, or more stringent than the numeric limitations.

5. Satisfaction of Antidegradation Policy Requirements

The DOH established the State antidegradation policy in HAR, 11-54-1.1, which incorporates the federal antidegradation policy at 40 CFR 131.12. HAR, 11-54-1.1 requires that the existing quality of waters be maintained unless degradation is justified based on specific findings demonstrating that allowing lower water quality is necessary to accommodate economic or social development in the area in which the waters are located.

The conditions in the draft permit are no less stringent than in the current permit for BOD, TSS, pH, turbidity, copper, nickel, selenium, zinc, enterococci, and whole effluent toxicity, except as noted in D.4 above where DOH's new implementation procedures for regulating nutrients and storm water were applied, and do not allow for a decrease in treatment or an increase in pollutant loading.

Therefore, the permitted discharge is consistent with antidegradation provisions of 40 CFR 131.12 and HAR, 11-54-1.1. The impact on existing water quality will be insignificant and the level of water quality necessary to protect the existing uses will be maintained and protected.

E. Rationale for Monitoring and Reporting Requirements

40 CFR 122.41(j) specify monitoring requirements applicable to all NPDES permits. HAR, 11-55-28 establishes monitoring requirements applicable to NPDES permits within the State of Hawaii. 40 CFR 122.48 and HAR, 11-55-28 require that all NPDES permits specify requirements for recording and reporting monitoring results. The principal purposes of a monitoring program are to:

- Document compliance with waste discharge requirements and prohibitions established by the DOH;
- Facilitate self-policing by the Permittee in the prevention and abatement of pollution arising from waste discharge;
- Develop or assist in the development of limitations, discharge prohibitions, national standards of performance, pretreatment and toxicity standards, and other standards; and,
- Prepare water and wastewater quality inventories.

The draft permit establishes monitoring and reporting requirements to implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the draft permit.

1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of pretreatment, assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. Influent monitoring requirements for flow, BOD₅ and TSS have been retained from the current permit. The proposed influent water monitoring requirements are specified in Part A.1 of the draft permit.

2. Effluent Monitoring – Outfall Serial No. 001

Effluent monitoring requirements have been either retained from the current permit or established in this draft permit for Outfall Serial No. 001 as follows.

- a. Monitoring requirements for BOD, TSS, and pH are retained from the current

permit to demonstrate compliance with technology-based standards set in 40 CFR 133.102, Secondary Treatment.

- b.** Monitoring requirements for total nitrogen and total phosphorus are retained from the current permit, except as noted above, compliance is based on annual loading.
- c.** Monitoring requirements for flow, turbidity, and priority pollutants have been retained from the current permit to determine compliance with effluent limitations. However, monitoring priority pollutant units have been changed from mg/L to µg/L to be consistent with HAR, 11-54-4 toxics criteria.
- d.** Monitoring requirements for enterococcus were retained and reflect the recreational standards in HAR, 11-54-8.
- e.** Monitoring requirements for copper, nickel, selenium, and zinc have been retained in the draft permit to determine compliance with effluent limits.

3. Storm Water Monitoring

Storm water monitoring in Appendix 2 of the draft permit was revised to be consistent with the 2015 EPA MSGP, where compliance monitoring for sector-specific pollutants and for those pollutants causing impairments in the receiving water. There are no monitoring requirements specified for Sector T, Treatment Works. Although the receiving water, Waikele Stream is impaired for total nitrogen, nitrate + nitrite nitrogen and turbidity, following Appendix 2, the draft permit requires monitoring for total nitrogen and total suspended solids, which are considered surrogates for nitrate + nitrite nitrogen and turbidity, respectively.

In addition, if a pollutant is not detected in the storm water discharge or its presence is caused solely by natural background sources, monitoring for the pollutant may be discontinued but a thorough demonstration supporting the Permittee's determination must be documented in the SWPPP.

The current permit covers only one storm water discharge point to Waikele Stream, however, the renewal application included two discharge points. As a result, effluent limits and monitoring requirements are expanded to cover both outfalls. HAR, 11-55-6.a(7)(A) specifies that “[w]here two or more outfalls are expected, based on the features and activities within the drainage areas, to convey substantially similar storm water discharges, the permittee may request to monitor only one of those outfalls. The director may approve the request if the permittee demonstrates that the outfalls monitored are representative for the overall storm water discharges from the facility.”

EPA defines “substantially identical” in the 2015 MSGP as follows: “... two or more outfalls that you believe discharge substantially identical effluents, based on the similarities of the general industrial activities and control measures, exposed materials that may significantly contribute pollutants to storm water, and runoff coefficients of their drainage areas” (See Part 6.1.1 of the 2008 MSGP). Based on this definition, the justification for the outfall sampling locations chosen shall be incorporated into the monitoring plan.

4. Whole Effluent Toxicity Monitoring

Consistent with the current permit, whole effluent toxicity testing at Outfall Serial No. 001 is required to demonstrate compliance with whole-effluent toxicity effluent limitations as specified in Parts A.1 and B of the draft permit.

F. Rationale for Provisions

1. Standard Provisions

The Permittee is required to comply with DOH Standard NPDES Permit Conditions (Version 15), which are included as part of the draft permit.

2. Monitoring and Reporting Requirements

The Permittee shall comply with all monitoring and reporting requirements included in the draft permit and in the DOH Standard NPDES Permit Conditions (Version 15).

3. Special Provisions

a. Reopener Provisions

The draft permit may be modified in accordance with the requirements set forth at 40 CFR 122 and 124, to include appropriate conditions or limitations based on newly available information, or to implement any new state water quality criteria that are approved by the EPA.

b. Special Studies and Additional Monitoring Requirements

(1) Toxicity Reduction Requirement. The draft permit requires the Permittee to submit an initial investigation Toxicity Reduction Evaluation (TRE) workplan to the Director and EPA which shall describe steps which the Permittee intends to follow in the event that toxicity is detected. This

requirement is retained from the current permit and is discussed in detail in Part B.5 of the draft permit.

c. Storm Water Pollution Prevention Plan

The proposed storm water runoff discharge conditions and requirements are incorporated in Appendix 2 of the draft permit. Accordingly, the Permittee shall develop and implement an SWPPP.

4. Special Provisions for Municipal Facilities

a. Pretreatment Requirements

The federal CWA 307(b), and federal regulations, 40 CFR 403, require POTWs to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards or permit limitations. Pretreatment requirements are imposed in this permit pursuant to CWA 307(b), (c), (d), and 402(b), 40 CFR 125, 40 CFR 403, and in HAR, 11-55-24.

The General Pretreatment Regulations require all large POTWs (those designed to treat flows of more than 5 million gallons per day) and smaller POTWs (that accept wastewater from industrial users (IUs) that could affect the treatment plant or its discharges) to establish local pretreatment programs. The General Pretreatment Regulations require the Permittee to control pollutants from the industrial users which may pass through or interfere with wastewater treatment processes or which may contaminate sewage sludge.

b. Biosolids Requirements

Consistent with the current permit, the draft permit requires the Permittee to comply with sludge requirements based 40 CFR Parts 257, 258, and 503, and HAR, Chapters 11-58 and 11-62, which require any person who prepare sewage sludge, applies sewage sludge to the land, or fires sewage sludge in a sewage sludge incinerator or the owner/operator of a surface disposal site to comply with the regulations. The facility is subject to these regulations because they prepare sewage sludge for disposal.

5. Other Special Provisions

- a.** The draft permit requires the Permittee to submit a wastewater pollution control plan by April 30 each year. This provision is retained from the current permit and is required by DOH to ensure that the Permittee is operating correctly and attaining maximum treatment of pollutants discharged by considering all aspects of the wastewater treatment system. This provision is included in Part D of the draft permit
- b.** The Permittee shall maintain in good working order a sufficient alternate power source for operating the wastewater treatment and disposal facilities. This provision is retained from the current permit to ensure that if a power failure occurs, the facility is well equipped to maintain treatment operations until power resumes. If an alternate power source is not in existence, the draft permit requires the Permittee to halt, reduce, or otherwise control all discharges upon the reduction, loss, or failure of the primary source of power. This provision is included in Part H.5 of the draft permit.
- c.** Requirements for Receiving Sludge are maintained in Part F.2 of the draft permit.

G. Public Participation

A public notice of draft permit will be published in the **Honolulu Star-Advertiser** on **July 10, 2019**, soliciting public comment on the proposed action for a 30-day period. The permit application, applicable documents, draft permit and fact sheet will be available for public review at the CWB office. Persons wishing to comment upon or object to the proposed NPDES permit in accordance with HAR, 11-55-09(b) and 11-55-09(d), will have the opportunity to submit their comments in writing either in person or by mail, to:

Clean Water Branch
Environmental Management Division
2827 Waimano Home Road, Room 225
Pearl City, Hawaii 96782

APPENDIX 1 Storm Water Associated with Industrial Activity Fact Sheet

Storm Water Associated with Industrial Activity Fact Sheet

In accordance with NPDES regulations at 40 CFR 124.8(a) and 124.8(b) the following information is provided for Appendix 2 of the draft permit.

1. A brief description of the type of facility or activity which is the subject of the draft permit;

Industrial activities regulated under 40 CFR 122.26(b)(14) that meet the eligibility provisions describe in Part 1.1 of Appendix 2 are subject to Appendix 2, except construction activities at 40 CFR 122.26(b)(14)(x).

The proposed regulations are available for the following 29 sectors of industrial activities, as well as any discharges not covered under the 29 sectors (Sector AD) that has been identified by the Department of Health (DOH) as appropriate for coverage. The sector descriptions are based on Standard Industrial Classification (SIC) codes and Industrial Activity Codes consistent with the definition of storm water discharge associated with industrial activity at 40 CFR 122.26(b)(14)(i-ix, xi). The sectors are listed below:

Sector A – Timber Products	Sector P – Land Transportation
Sector B – Paper and Allied Products Manufacturing	Sector Q – Water Transportation
Sector C – Chemical and Allied Products Manufacturing	Sector R – Ship and Boat Building or Repairing Yards
Sector D – Asphalt Paving and Roofing Materials Manufactures and Lubricant	Sector S – Air Transportation Facilities
Sector E – Glass, Clay, Cement, Concrete, and Gypsum Product	Sector T – Treatment Works
Sector F – Primary Metals	Sector U – Food and Kindred Products
Sector G – Metal Mining (Ore Mining and Dressing)	Sector V – Textile Mills, Apparel, and other Fabric Products Manufacturing
Sector H – Coal Mines and Coal Mining-Related Facilities	Sector W – Furniture and Fixtures
Sector I – Oil and Gas Extraction and Refining	Sector X – Printing and Publishing
Sector J – Mineral Mining and Dressing	Sector Y – Rubber, Miscellaneous Plastic Products, and Miscellaneous Manufacturing Industries
Sector K – Hazardous Waste Treatment Storage or Disposal	Sector Z – Leather Tanning and Finishing
Sector L – Landfills and Land Application Sites	Sector AA – Fabricated Metal Products

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Sector M – Automobile Salvage Yards	Sector AB – Transportation Equipment, Industrial or Commercial Machinery
Sector N – Scrap Recycling Facilities	Sector AC – Electronic, Electrical, Photographic and Optical Goods
Sector O – Steam Electric Generating Facilities	Sector AD – Reserved for Facilities Not Covered Under Other Sectors and Designated by the Director

Currently, an estimated 170 industrial facilities are authorized to discharge (or are “covered”) by the existing Appendix B.

2. The type and quantity of wastes, fluids, or pollutants which are proposed to be or are being treated, stored, disposed of, injected, emitted, or discharged.

Storm water discharge associated with industrial activity, including certain allowable non-storm water.

3. A brief summary of the basis for the draft permit conditions including references to applicable statutory or regulatory provisions and appropriate supporting references to the administrative record required by § 124.9 (for EPA-issued permits);

The Clean Water Act (“CWA”) establishes a comprehensive program “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. 1251(a). The CWA also includes the objective of attaining “water quality which provides for the protection and propagation of fish, shellfish and wildlife and... recreation in and on the water.” 33 U.S.C. 1251(a)(2)). To achieve these goals, the CWA requires EPA to control discharges of pollutants from point sources through the issuance of National Pollutant Discharge Elimination System (“NPDES”) permits.

Section 405 of the Water Quality Act of 1987 (WQA) added section 402(p) of the Clean Water Act (CWA), which directed the Environmental Protection Agency (EPA) to develop a phased approach to regulate storm water discharges under the NPDES program. EPA published a final regulation on the first phase on this program on November 16, 1990, establishing permit application requirements for “storm water discharges associated with industrial activity.” See 55 FR 47990. EPA defined the term “storm water discharge associated with industrial activity” in a comprehensive manner to cover a wide variety of facilities. See 40 CFR 122.26(b)(14). On November of 1974, EPA authorized the administration of the National Pollutant Discharge Elimination System (NPDES) Permit program in Hawaii to DOH. DOH’s proposal is to issue Appendix 2, MSGP under this statutory and regulatory authority.

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In accordance with HAR §11-55-02(c), §11-55-19(a)(4)(B), and 40 CFR 123.25(a), the proposed revisions were meant to be consistent with the EPA's 2015 MSGP, which the DOH, Clean Water Branch also believes is appropriate for Hawaii.

The EPA's 2015 MSGP became effective on August 12, 2015 and all documents related to it, including the Fact Sheet are available at:

<https://www.epa.gov/npdes/final-2015-msgp-documents>. DOH's intent was to develop a permit modelled after the EPA's 2015 MSGP. Thus, the DOH recommends those interested in this Fact Sheet to refer to the EPA's 2015 MSGP Fact Sheet as the primary resource. Please also refer to the previous versions of the EPA's MSGP available at: <https://www.epa.gov/npdes/previous-versions-epas-msgp-documents> for information about how the EPA's MSGP has evolved to its present version.

A majority of the requirements are the same as in the EPA's 2015 MSGP, however, the proposed Appendix 2 was revised in consideration of the State's Administrative Rules, its implementation procedures (refer to the Hawaii Implementation Plan for Toxic Pollutants and Nutrients in NPDES Permits), and for situations not applicable to Hawaii (e.g., deicing, salt storage, Tier waters, etc.). Additionally, the proposed Appendix 2 was revised from the previous version to allow certain sectors (refer to Table 1-1 of the permit) with Effluent Limitation Guidelines (ELGs) to be covered under this general permit, allows discharges to all classifications of State waters, and implements Benchmark monitoring (if applicable) in lieu of previously required compliance with numeric effluent limitations. If a sector has both Benchmark and ELGs, both shall apply, however only the exceedance of the ELG would be violation of the permit. For an exceedance of a Benchmark, a violation would occur upon the failure to implement corrective actions. (The proposed revision aims to require Permittees to implement corrective actions by making the failure to implement corrective actions a violation of the permit instead of numeric effluent limitations, unless a sector specific ELG has already been promulgated. For the development of ELGs, please refer to the Federal Notice and Fact Sheets for EPA's previous versions at the website address provided above.

In the current permit, exceedance of a numeric effluent limitation was a violation of the permit. However, the permit wasn't clear if a failure to implement corrective actions to address the exceedance was also a violation (which made enforcement difficult). The DOH believes that the implementation of corrective actions to be more important than the exceedance and therefore has adopted the EPA's approach (i.e., EPA's 2015 MSGP). The intent is to place greater emphasis on taking corrective actions to minimize further pollutant discharges than on exceeding a numeric limit. Since the implementation of corrective actions serves as the mechanism for the reduction of the pollutant, the violation occurs upon the failure to take corrective actions and not on the exceedance.

Also, placing the violation on the failure to take corrective action seeks to address the contentious topic of whether assigning numeric water quality based effluent limits for industrial storm water discharge based on the State's Water Quality Standards is unreasonable. The DOH-CWB has held multiple stakeholder meetings with Permittees, including Federal, State, and County government agencies who have all expressed concerns about the practicality of numeric WQBELs for industrial storm water dischargers. After considering the concerns of the Permittees and evaluating the current permit, the DOH-CWB has determined that it is not feasible to establish numeric WQBELs for industrial storm water dischargers; BMPs shall be utilized when numeric effluent limits are infeasible per 40 CFR 122.44(k); and the benchmark monitoring and BMPs in the proposed Appendix 2 are appropriate WQBELs. Below are the reasons why the DOH-CWB believes the numeric WQBELs from the current permit are not practicable:

- Storm events are variable in nature and the pollutants in the storm water that may or may not originate from the discharger.
- It is extremely difficult, if not impossible to objectively determine if a facility is in compliance with its permit requirements. The DOH-CWB acknowledges that requiring industrial storm water Permittees to comply with numeric WQBELs is viewed as an easier way to measure compliance, but it is not as simple as selecting a number directly from our WQS due to the unique nature of storm events and storm water discharges. Any numeric limit that is placed in an industrial storm water permit must take into consideration the episodic nature of storm events, be truly representative of storm water discharges, and pollutants in the storm water discharges that did not originate from the Permittee that they may not have a means to control.
- There are pollutants in storm water discharges that did not originate from the facility (run on, atmospheric deposition, etc.) or the discharger may not have the means to control the pollutant, and therefore, must be given special consideration.
- Monitoring for enforcement of numeric effluent limits are challenging. While spot checks can be made at some of the outfalls, there is a wide variation in storm water quality from place to place, facility to facility, and storm to storm. Geographical location and land use are important factors affecting storm water quality for most constituents. Since the storm-to-storm variation at any outfall can be high, it is unreasonable to expect all events to be below a numeric value. Also, there could be a number of storm events each year that are large in volume and/or intensity that can exceed the design capacity volume or flow rates of most BMPs. Assessing compliance during these larger events represents another challenge to DOH and the discharger.
- There are no protocols that enable an engineer to design with certainty a BMP that will produce a desired outflow concentration for a constituent of concern. Even if we use % removal, it will vary directly with the inflow concentration. It will take substantial research to develop design criteria for

the removal of pollutants with confidence intervals that enable DOH to make reliable estimates of the median and variance of the effluent concentrations to be expected from the various types of BMPs. Until this is done, it is impossible to assign legally enforceable numerical effluent limitation to any particular BMP.

- Many facilities rely on non-structural control measures, making it impossible to set numeric effluent limits because little is known about the quantity and quality performance of non-structural controls.
- DOH has to consider the total economic impact and does not want to penalize Hawaii businesses subject to industrial storm water permitting.

The State has adopted its own WQS in HAR, Chapter 11-54, Water Quality Standards and the proposed Appendix 2 includes water quality-based effluent limits (WQBELs) to ensure the authorized discharges will be controlled as necessary to meet applicable water quality standards. The provisions of Part 2.2 constitute the WQBELs of the proposed Appendix 2, and supplement the permit's technology-based effluent limits in Part 2.1.

The WQBELS ensures that MSGP-authorized discharges will be controlled as necessary to meet applicable water quality standards, pursuant to CWA section 301(b)(1)(C) and 40 CFR 122.44(d)(1). The provisions of Part 2.2 constitute the WQBELs of the 2015 MSGP, and supplement the permit's technology-based effluent limits in Part 2.1. The following is a list of the permits' WQBELs:

- Control discharges as necessary to meet applicable water quality standards (i.e., discharges must not cause or contribute to a violation of applicable water quality standards) (See Part 2.2.1);
- Implement any additional measures that are necessary to be consistent with the assumptions and requirements of the applicable Total Maximum Daily Load (TMDL) and its wasteload allocation (See Part 2.2.2.1). For discharges to impaired waters without a TMDL, conduct impaired waters monitoring (See Part 2.2.2.2). Additionally, new discharges to impaired waters must implement any measures required per the Part 1.1.4.8 eligibility requirements;

Prior to or after initial discharge authorization, DOH may require operators to implement additional measures on a facility-specific basis, or require permittees to obtain coverage under an individual permit, if information in the NOI, required reports, or other sources indicates that, after complying with the technology-based limits in Part 2.1 and the WQBELs in Part 2.2, discharges will not be controlled as necessary to meet water quality standards.

Facilities that achieve the permit's technology-based limits through the careful selection, design, installation, and implementation of effective control measures are likely to be controlling their storm water discharges to a degree that would make additional water quality-based measures unnecessary. However, to ensure

that this is so, the permit contains additional provisions in Part 2.2, which, along with the BAT/BPT/BCT limits in the permit, are as stringent as necessary to achieve water quality standards.

The WQBELs included in the permit are non-numeric. DOH, consistent with the EPA's 2015 MSGP, relies on a narrative limit to ensure discharges are controlled as necessary to meet applicable water quality standards, and to ensure that additional measures are employed where necessary to meet the narrative WQBELs, or to be consistent with the assumptions and requirements of an applicable TMDL and its WLAs. This is a reasonable approach for the proposed Appendix 2, based on the following considerations:

- Receiving waterbody information is not available about individual dischargers. Receiving water information is necessary for DOH to determine what, if any, special protections apply to that water.
- The EPA, along with the DOH realizes there are greater cost burdens associated with analytical monitoring in comparison to visual examinations.
- If the operator is unwilling or unable to implement the required control measures the facility is not eligible for Appendix 2 coverage and must instead apply for an individual permit.

The proposed Appendix 2 maintains its regulatory authority under the Clean Water Act even as it shifts from numeric to narrative based water quality requirements. Of importance is, the permittee shall not cause or contribute to a violation of the basic water quality criteria specified in Sections 11-54-4(a) and (b), refer to HAR 11-55, Appendix A, Department of Health Standard General Permit Conditions.

DOH has removed requiring monitoring for the parameters listed in the current permit, unless a parameter has been identified as having a benchmark or effluent limitation in the EPA's 2015 MSGP. In its place, the proposed permit has added detailed language to better describe the requirements necessary to meet the DOH expectations and thereby comply with the water quality based permit conditions. Specifically, the language has been expanded within the Control Measures (Part 2), Inspections (Part 3), and Corrective Action (Part 4) parts of the proposed permit and as a result, expects that compliance with the conditions in this permit will control discharges as necessary to meet applicable water quality standards in all receiving water classifications.

In addition, the proposed Appendix 2 follows the EPA's 2015 MSGP in covering certain allowable sources of non-storm water which have been both the EPA's and DOH's long stand practice of allowing those discharges from Municipal Separate Storm Sewer Systems (MS4s).

In the current permit, monitoring is required for Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Suspended Solids (TSS), Total Phosphorus (TP), Total Nitrogen (TN), Nitrate + Nitrite Nitrogen, Oil and Grease, pH and toxic parameters. DOH has determined that since WQBELs do not exist for BOD and COD that this requirement would be removed, unless a benchmark or effluent limit exists in the EPA's 2015 MSGP, as it only increased the cost for Permittees to comply without any reported direct benefit to water quality or enforcement action. For TSS, TP, Nitrate + Nitrite Nitrogen, Oil and Grease, and pH monitoring was also removed because if a sector didn't already require that pollutant to be monitored in the EPA's 2015 MSGP, then the EPA had already ruled out that pollutant to be a pollutant of concern. For TN, the DOH has in its Hawaii Implementation Plan decided to no longer require monitoring for TN.

Toxic monitoring has been removed in the proposed Appendix 2 because, as discussed in the 2015 EPA's MSGP Fact Sheet, page 21 of 80: "EPA has determined that the technology-based numeric and non-numeric effluent limits in the 2015 MSGP, taken as a whole, constitute BPT for all pollutants, BCT for conventional pollutants, and BAT for toxic and nonconventional pollutants that may be discharged in industrial storm water." The DOH has incorporated the same technology-based numeric and non-numeric effluent limits in its proposed Appendix 2.

Besides those modifications to the EPA's 2015 MSGP required to make the permit appropriate for the State (e.g., formatting, revising references to the EPA/Agency, workflow, etc.), the only substantive changes to the EPA's 2015 MSGP were:

- 1) Deleting coverage to those facilities that use polymers and/or chemical treatments as part of their controls. Consistent with DOH's HAR, Chapter 11-55, Appendix C, coverage is not eligible if polymers are used, and
 - 2) Deleting those requirements found in the EPA's 2015 MSGP that were not currently applicable. Those not applicable to the State included requirements for: Endangered and Threatened Species and Critical Habitat as part of the Endangered Species Act Consultation or ESA Section 10 permit as required for the Federal Government; Historical Properties Preservation; Tribal areas; rail lines, salt storage piles or piles containing salt; areas subject to snow, snowmelt, and other requirement intended for other States/Regions.
4. Reasons why any requested variances or alternatives to required standards do or do not appear justified;

Not applicable.

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5. A description of the procedures for reaching a final decision on the draft permit including:

- (i) The beginning and ending dates of the comment period under § 124.10 and the address where comments will be received;
- (ii) Procedures for requesting a hearing and the nature of that hearing; and
- (iii) Any other procedures by which the public may participate in the final decision.

Refer to HAR 11-1-51 procedures for adopting rules. The proposed NPDES General Permit is issued as Appendix 2.

6. Name and telephone number of a person to contact for additional information.

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7. For NPDES permits, provisions satisfying the requirements of § 124.56. The CWA requires that discharges from existing facilities, at a minimum, must meet technology-based effluent limitations reflecting, among other things, the technological capability of permittees to control pollutants in their discharges. Water quality-based effluent limitations (WQBELs) are required by CWA Section 301(b)(1)(C). Both technology-based and water quality-based effluent limitations are implemented through NPDES permits. CWA sections 301(a) and (b).

Both technology-based limits using the national promulgated ELGs and State WQS have been applied.

8. Justification for waiver of any application requirements under § 122.21(j) or (q) of this chapter.

Not applicable.